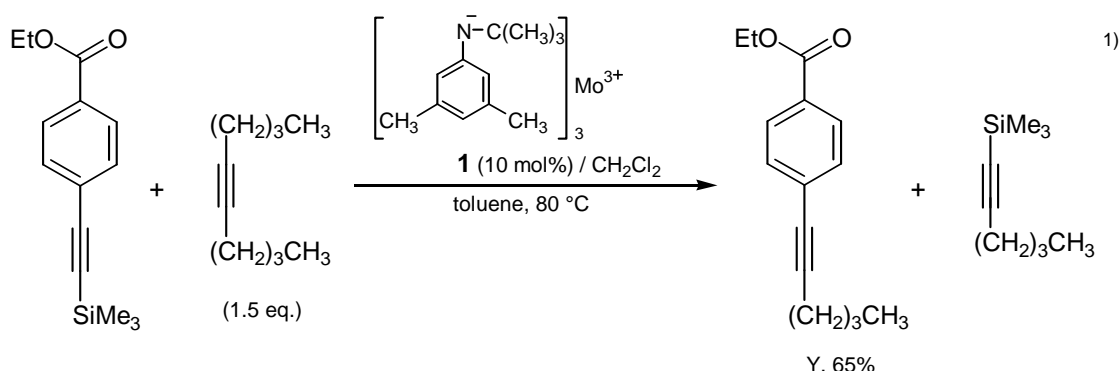


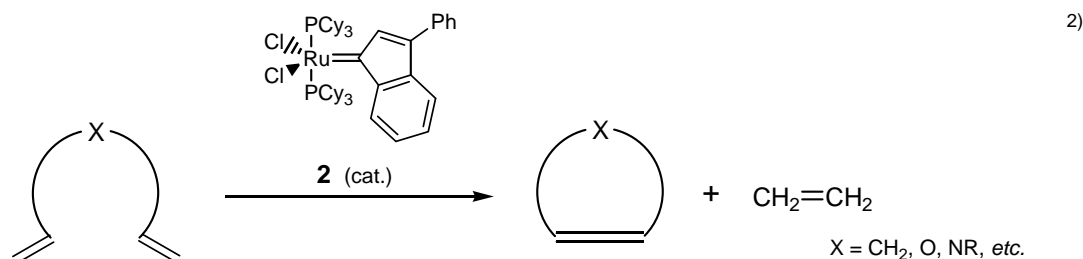
Metathesis Catalysts

In organic synthesis, a metathesis reaction is taken to mean a catalytic reaction in which recombination of the bonds between two kinds of olefins or alkynes occurs. It is indispensable for organic synthesis as a useful method for the formation of new carbon-carbon bonds. Additionally, because macrocyclic compounds can be obtained by ring closing metathesis reaction, the transformation has often featured as a key step in the synthesis of macrocyclic natural products.

The efficiency of **1** and **2** as catalysts for alkyne and olefin metathesis respectively has been reported by Fürstner *et al.*.



The compound **1** is a three-coordinate molybdenum(III) complex developed by Cummins *et al.* They have reported that **1** reacts with dinitrogen to give the corresponding nitridomolybdenum complex. Fürstner *et al.* have reported alkyne metathesis reactions using **1** as a catalyst. Since these reactions proceed under mild conditions and the protocol permits the use of various functionalized alkynes, **1** has attracted much attention.¹⁾



The ring closing metathesis (RCM) reaction in which metal carbene complexes are used as catalysts is a useful way to afford a new carbon-carbon bond formation by recombining the bond between terminal olefins. As an example of metal carbene complexes, ruthenium analogues represented by Grubbs catalyst, are widely used because of their high functional group selectivity for olefin. The compound **2**, another example of a ruthenium carbene complex, is stable in the atmosphere and shows high catalytic activity in the RCM reaction. The total synthesis of various natural products using the RCM reaction with **2**, which is situated as key reaction, have been reported.²⁾

Keywords : metathesis catalyst

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T2358	Tris(<i>N-tert</i> -butyl-3,5-dimethylanilino)molybdenum(III)	(1)		100mg
P1688	(3-Phenyl-1 <i>H</i> -inden-1-ylidene)bis(tricyclohexylphosphine)-ruthenium(IV) Dichloride Tetrahydrofuran Adduct	(2)	100mg	1g

References

- 1) C. C. Cummins, *Chem. Commun.*, **1998**, 1777; A. Fürstner, C. Mathes, C. W. Lehmann, *J. Am. Chem. Soc.*, **1999**, *121*, 9453; A. Fürstner, C. Mathes, *Org. Lett.*, **2001**, *3*, 221; J. J. Curley, E. L. Sceats, C. C. Cummins, *J. Am. Chem. Soc.*, **2006**, *128*, 14036; W. Zhang, Y. Lu, J. S. Moore, *Org. Synth.*, **2007**, *84*, 163.
- 2) A. Fürstner, J. Grabowski, C. W. Lehmann, *J. Org. Chem.*, **1999**, *64*, 8275; A. Fürstner, O. R. Thiel, *J. Org. Chem.*, **2000**, *65*, 1738; A. Fürstner, O. Guth, A. Düffels, G. Seidel, M. Liebl, B. Gabor, R. Mynott, *Chem. Eur. J.*, **2001**, *7*, 4811.